Amendments to the Claims

1. (Currently amended) A method for designing a tire noise pitch sequence for a pneumatic tire; the method comprising the steps of:

selecting at least a first, a second, and a third modulation order;

~~defining~~ selecting the amplitude for each of the selected modulation orders; the amplitudes of the first modulation and second modulation orders being selected to be smaller than or equal to the amplitude of the third modulation order;

~~defining~~ selecting the phase for each of the selected modulation orders;

creating a function for each modulation order that includes the defined amplitude and phase of the modulation order;

summing the created functions for each modulation order to define a summation of the functions; and

defining a tire noise pitch sequence from the summation of the functions.

2. (Original) The method of claim 1, wherein the step of defining the tire noise pitch sequence includes the step of calculating a determined number of pitch sizes from the summation of the functions.

3. (Original) The method of claim 2, wherein the step of calculating the determined number of pitch sizes from the summation of the functions includes

the step of using the accumulation of the deviation of the arc length from the arc length of the mean pitch size.

4. (Original) The method of claim 3, further comprising the step of interpolating a curve defined by the accumulation of the deviation of the arc length from the arc length of the mean pitch size.

5. (Previously presented) The method of claim 4, further comprising the steps of:

selecting a total number of pitches, a number of different pitch sizes, and pitch ratios; and

fitting the determined number of pitch sizes to the selected number of pitch sizes.

6. (Previously presented) The method of claim 2, further comprising the steps of:

selecting a total number of pitches, a number of different pitch sizes, and pitch ratios; and

fitting the determined number of pitch sizes to the selected number of pitch sizes.

7. (Original) The method of claim 6, further comprising the step of setting the selected number of pitch sizes to a number between 3 and 7.

8. (Original) The method of claim 6, wherein the step of fitting the determined number of pitch sizes to the selected number of pitch sizes includes the step of identifying the range of determined number of pitch sizes and evenly dividing the identified range by the selected number of pitch sizes.

9. (Original) The method of claim 6, further comprising the steps of selecting the number of different pitch sizes to be 5 and selecting the pitch ratios to be 1.00, 1.10, 1.25, 1.40, and 1.50.

10. (Original) The method of claim 6, further comprising the steps of selecting the number of different pitch sizes to be 3 and selecting the pitch ratios to be 1.00, 1.25, and 1.50.

11. (Original) The method of claim 1, wherein the step of selecting the number of modulation orders includes the step of selecting between 3 and 7 modulation orders.

12. (Original) The method of claim 11, wherein the step of defining the amplitudes of the modulation orders includes the step of defining the amplitudes of the first and second orders to be smaller than the amplitudes of the remaining orders.

13. (Original) The method of claim 12, wherein the step of defining the amplitudes of the modulation orders includes the step of defining the amplitudes of the first and second orders to be zero.

14. (Original) The method of claim 12, wherein the step of defining the amplitudes of the modulation orders includes the step of varying the amplitudes for the selected modulation orders.

15. (Currently amended) A method for defining a tire noise pitch sequence; comprising the steps of:

(a) first defining characteristics of the tire noise generated by tire tread lug stiffness variations; and

(b) then defining a tire noise pitch sequence that yields the defined characteristics ~~whereby preferred modulation characteristics and good level characteristics are provided~~.

16. (Previously presented) The method of claim 15, wherein step (a) includes the steps of:

defining amplitudes of at least five modulation orders;

defining a phase for each modulation order;

creating a function for each modulation order that includes the defined amplitude and phase of the modulation order; and

summing the created functions for each modulation order to create a wave Y having a curve.

17. (Previously presented) The method of claim 16, further comprising the steps of:

defining a lug stiffness variation curve (Di) to be the accumulation of the deviation of the arc length from the arc length of the mean pitch size;

setting the lug stiffness variation curve equal to the curve of the Y wave to define an equation; and

solving the equation to obtain a unique set of pitch sizes.

18. (Previously presented) The method of claim 17, further comprising the steps of selecting a total number of pitches, a number of different pitch sizes, and pitch ratios; and fitting the unique set of pitch sizes to the selected number of pitch sizes.

19 - 20. (Canceled)

21. (Currently amended) A method for designing a tire noise pitch sequence for a pneumatic tire; the method comprising the steps of:

selecting three, four, five, six, or seven modulation orders;

defining an amplitude for each of the selected modulation orders;

defining a phase for each selected modulation order;

creating a function for each modulation order that includes the defined amplitude and phase of the modulation order;

summing the created functions for each modulation order to create a wave Y having a curve;

defining a lug stiffness variation curve (Di) to be the accumulation of the deviation of the arc length from the arc length of the mean pitch size;

setting the lug stiffness variation curve equal to the curve of the Y wave to define an equation; ~~and~~

solving the equation to obtain a unique set of pitch sizes; and

using the unique set of pitch sizes to define a tire noise pitch sequence.

22. (Previously presented) The method of claim 21, further comprising the steps of selecting a total number of pitches, five different pitch sizes, and pitch ratios of 1.00, 1.10, 1.25, 1.40, and 1.50; and fitting the unique set of pitch sizes to the selected five pitch sizes.

23. (Previously presented) The method of claim 15, wherein step (a) includes the steps of defining a level for a first modulation order, defining a level for a second modulation order, a level for a third modulation order; the levels of the first and second modulation orders being less than the level of the third modulation order.

24. (Previously presented) The method of claim 23, wherein step (a) further includes the step of defining the level of the first modulation order to be zero and defining the level of the second modulation order to be zero.